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ABSTRACT

This paper explores gender-equity issues from three distinctive perspectives: numeric distribution, compensation, and sense of empowerment. It is based on large-scale national surveys--the School and Staffing Surveys--in which public-school administrators assessed the differences between female and male principals. Based on findings from the study, it appears that significant gains have been made in achieving gender equity among public-school administrators. From 1984 to 1994, female representation in the administrator work force increased from 21.4 percent to 34.5 percent. Among principals with fewer than 5 years of administrative experience, more than 38 percent are female. However, such gains are still not significant enough to offset the large gap in numeric distributions between female and male principals; female principals continue to be underrepresented among public-school administrators. In terms of compensation, differences in annual salary between female and male principals seem to be statistically insignificant. However, it takes women longer to become principals, and they are less likely to be paid as highly as their male counterparts. Even so, female principals have a greater sense of empowerment, believing that they have more decision-making power in school matters than do their male counterparts. Seven tables provide data on gender distributions of principals and other information. (RJM)

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Exploring Gender Differences in America's School Administrator Workforce: Statistical Evidence from National Surveys

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Executive Summary

This paper, based on large scale national surveys of public school administrators conducted by the National Center for Education Statistics, explores the gender equity issues from three distinctive perspectives: numeric distribution, compensation, and sense of empowerment. Differences between female and male principals are compared while controlling for variations in personal attributes and school contexts.

Based on findings from this study, the authors believe that efforts to achieve gender equity in public school administrator workforce have made significant progress. From 1984 to 1994, female representation in the administrator workforce has increased from 21.4% to 34.5%. Among principals with less than 5 years of administrative experience, more than 38% are female. However, such progresses are still not significant enough to offset the large gap in numeric distributions between female and male principals in America's public schools. This is especially true in secondary schools and rural/small town schools where the principal workforce is still dominated by male administrators.

In terms of compensation, the overall difference in annual salary between female and male principals seems to be small and statistically insignificant. However, when the research sample is divided into sub-samples by different control variables, there are some interesting differences: female principals tend to make less when the differences are controlled by school location variations. Female principals in secondary schools on average earn higher salary than their male counterparts. Principals with more than 5 years of administrative experience do not differ very much in annual salary level. Nevertheless, for new principals (less than 5 years), male principals on average make $880 more than their female counterparts and the difference is statistically significant.

Female principals are underrepresented in the public school administrator workforce. In general, it takes female principals longer time (both administrative and teaching years) to become principals and they are less likely to get paid as high as their male counterparts. Despite these adversities, female principals are valued highly by their teachers. Female principals also have greater sense of empowerment – they feel they have more decision-making power in school matters than their male counterparts.

Exploring Gender Differences in America's School Administrator Workforce: Statistical Evidence from National Surveys

I Introduction

Pluralism, a major theme of the 1999 AERA Annual meeting, deals with both equity and diversity issues in education. This paper addresses the theme by focusing on gender differences in America's school administrator workforce. Since the passage of the Equal Pay Act of 1963 and the Civil Rights Act of 1964, progress has been made in narrowing the gap between men and women in career advancement opportunities and work compensations. However, studies suggest that the gender gap in education administration is still significantly large and deserves sustained policy attentions (NCES, 1997).

While it is indisputable that there is a gender gap in education administration, questions about the magnitude and the contextual variations of this gap as well as its relative impacts are still being debated. Factors contributing to the lingering controversies about gender inequity in education administration are many. However, methodological limitations of many studies in this area may have delayed the forging of a consensus view. Most studies in this area rely on qualitative studies (surveys or interviews) with a small number of observations (Eagly, Karau, & Johnson, 1992). They are mostly one-shot studies without a longitudinal component. They focus on urban and public schools and hence do not provide a comprehensive assessment of the situation. Charol Shakeshaft (1998) points out that limitations in sampling unit in many studies may also have restricted the level of analysis for gender and race together. Because these restrictions, it is difficult

to understand the representation of female African American in the school administrator workforce. "Even more difficult is to document the number of Asian-American, Native-American, and Latino women administrators (p.10)."

Given the limitations of current research on gender differences in the school administrator workforce, the objectives of this study are thus manifold: 1) documenting the gender differences in the education administration workforce by using data sources from large scale national school administrator surveys; 2) analyzing gender differences by taking into account contextual variations (i.e., school size, level, location, and minority representation); and 3) deriving policy implications from research findings.

2. Literature Review and Perspective Framework

For more than 3 decades, researchers have devoted considerable attention to gender differences in education administration -- from management style to leadership effectiveness and from career advancement opportunities to equality in compensations (Shakeshaft, 1987; Pounder, 1988; Ortiz & Marshall, 1988). While it is generally agreed that women are under-represented and under-paid in the school principal workforce, the degree to which this is the case is much less certain, as are the underlying causes. In general, there are two approaches to studying the issue of gender differences. One approach investigates the differences from the perspective of individual characteristics. Researchers using this approach believe that personal qualifications, family responsibilities, and networking capabilities are factors contributing to the gender differences (Gupton & Slick, 1996). For example, Riehl and Byrd (1997), in a study of school administrator aspirants, found that women candidates have much lower predicted probability of becoming a school

administrator. They claim that socialization factors such as family context and personal aspiration decreased women's chances.

Another approach to studying gender differences is from the perspective of organizational and environmental influences. Studies using this perspective focus on job- or position-related factors, such as size and location of the school. For example, Pounder (1988) found that the male/female administrator difference in salary and compensations may be only marginally related to gender itself and more closely related to occupational and positional segregation. She indicated that women administrators tend to cluster into elementary schools. Elementary school principals typically earn less than secondary school principals.

While both perspectives provide some interesting findings on the issue of gender differences, neither perspective alone can fully explain the causes and extent of the differences. In order to understand the gender difference issues better, a more comprehensive and integrative approach must be used to look at not just the numeric differences in gender representation, but also to consider these numbers in the broad contexts of the school environment and principals' personal and professional attributes. Young and Brown (1996), in a study of equity issues in school administrator compensations, suggest that gender differences should be considered based on the types and level of focal positions and a variety of variables purporting to influence hiring practices rather than gender difference alone. This suggestion points to a direction that may be more fruitful than focusing on only a certain aspect of principal characteristics.

The consideration of contextual factors in understanding gender differences is a necessary step towards finding out how male and female principals are positionally and

occupationally segregated (Pounder, 1988). Positional or occupational segregation occurs when a particular sex group seems to have a disproportionate share in a certain position or organization. For example, some people believe that rural and suburban schools tend to be dominated by the "good old *white* boys network" while central city schools are the territories of minority and female principals. Is this really true? How much can this explain the unbalanced representation of female principals in the school administrator workforce? These are the questions that cannot be fully explored when only simple numeric differentials are explored. A more useful approach is to take into account contextual variations and personal differences when considering the numeric imbalance of female representation in the school administrator workforce. Only when both principals' personal attributes and school environment factors are taken into account that we can identify the specific contexts in which female principals are facing career advancement barriers. Pressures and efforts for policy changes can be more effective if they are targeted more accurately at the specific areas where discriminatory practices are most prevalent.

3. Plan of Study

The plan for this study includes the following components:

(1) *to document the numeric differences in gender representations in the public school principal workforce and to assess the dependency between the gender variable and variables related to principals' working environments.* This analysis may help identify the specific areas where entry barriers may exist.

(2) *to identify and analyze the gender differences in principal compensation.* Discriminatory practices may continue beyond the entry point to on-the-job

treatment of female principals. One of the main indicators for measuring gender equity is the equality of pay. It has been more than 35 years since the passage of the Equal Pay Act of 1963, it is time to take stock of the achievements and the areas for continued improvements.

(3) *To assess and analyze the gender differences in principals' perception of empowerment.* Besides compensation, sense of empowerment is also important to the understanding of how female principals feel being treated equally on the-job.

4. Data Sources

Data for this study are mainly from the School and Staffing Surveys (SASS) conducted by the National Center for Education Statistics (NCES). Three waves of SASS (1987-88, 1990-91, and 1993-94) and their corresponding Common Core Data surveys are used in the analysis (Due to time constraint, only analysis findings from public school administrator data of 1993-94 are presented in this paper). SASS documents the workforce characteristics, compensations, attitudes of school principals, teachers, and district personnel. It is the largest and most comprehensive survey of its kind in the world.

There are several advantages for using this data source: First of all, it has a large and comprehensive sample of principals from all varieties of schools. It includes not only principals from public schools of different sizes, locations, and levels, but also private schools of different group types and religious affiliations (only public school samples are used for this paper). The 1987-88 SASS has a sample size of 9,317 public school principals and 3,513 from private schools (NCES, 1994) while the 1990-91 SASS has a

sample size of 9,330 public principals and 3,270 private principals (Kaufman and Huang, 1993). Such a high degree of representation affords researchers the opportunity to conduct analysis down to the basic level of the stratification sampling structure. For example, there are enough cases for comparing three different types of Jewish schools in the private school sample (Broughman, McLaughlin, O'Donnell, and Ries, 1995).

Secondly, the school administrator survey is inherently integrated with other components of SASS. For every school included in the survey, its principal and a number of teachers within the same school would also be surveyed. The school's file is also linked with the school district's file. These inter file linkages provide a high degree of flexibility to data users for incorporating relevant variables from other databases. For example, while the school survey provides contextual information regarding the schools in which principals work, the teacher survey supplements additional information on how well principals are rated by their teachers. Moreover, the school administrator questionnaire has maintained a high level of consistency over the past surveys that many of the core items remain unaltered. Such a consistency allows researchers to evaluate the changes overtime in many areas of the principalship.

So far, three separate SASS surveys have been conducted for the following periods: 1987-88, 1990-91, and 1993-94. Taken together, SASS provides a comprehensive portrait of each component of the educational system. It includes not only survey items that describe the contextual variables of schools, individual characteristics of teachers and school administrators, but also perceptions of teachers and principals over a wide range of school management issues. This study uses the 1993-94 SASS public administrator database, the latest in the three waves of surveys.

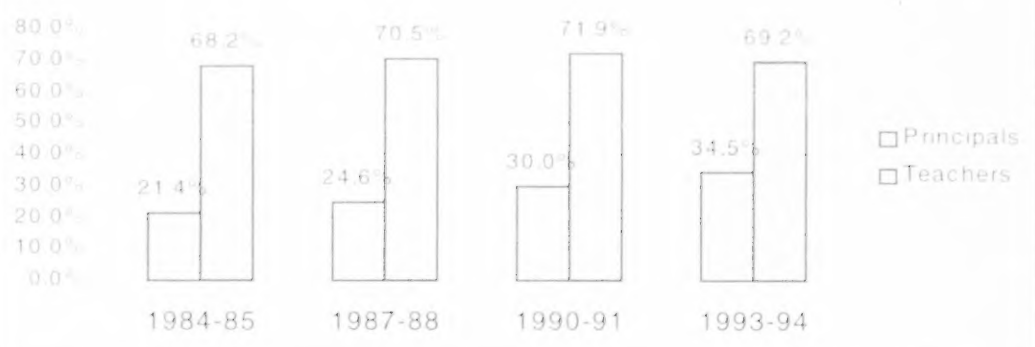
5. Findings

5.1 Distribution of Public School Principals

In terms of general distribution, statistical evidence from four national surveys within a 10 year period suggest that there is indeed a gender disparity in education administration. For example, in the most recent survey (1993-94), NCES finds that 69.2% of teachers are female while only 34.5% of school principals are female. However, it should also be noted that from 1984 to 1994, there is a gradual and substantial increase in female representation in the principal workforce while gender distributions in the teacher workforce remain stable. As Figure 1 indicates, female representation in the principal workforce has increased from 21.4% in 1984-85 to 34.5% in 1993-94. That is certainly an impressive progress.

Figure 1

Percent of Female Principals and Teachers in America' Public Schools

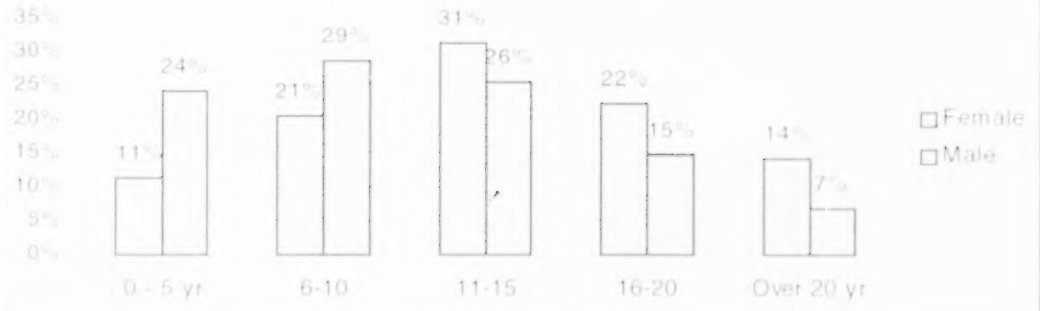


Source: OERI, 1994 and NCES, 1997.

While progresses are being made, the gender gap is still significantly large to be a cause of concern. This is especially true when we look at the large number of potential

female aspirants available for school administration positions. According to information collected by the Integrated Post-Secondary Education Data System (IPEDS – surveys conducted by the National Center for Education Statistics), more women than men have attained education administration degrees in the past 15 years. For example, in the 1993-94 academic year, 61% of master degrees and 55% of doctoral degrees in educational administration awarded by higher education institutions in the United States were earned by women (IPEDS, 1993-94). Since a graduate degree is always a prior condition for educational administration positions, there appears to be no shortage of academically qualified female candidates in this field. The continued gender inequity in the school principal workforce is even more puzzling when women principals had been shown to be effective school leaders. In fact, public school teachers, regardless of gender difference, generally consider female principals as more effective school leaders than their male counterparts (Nogay & Beebe, 1997; Zheng, 1996).

Figure 2
Gender Difference in Teaching Experience Prior to Principalship



In general, it takes female principal aspirants longer time to reach the principalship. As Figure 2 shows, among female principals, about 11% have 5 years or less teaching

experience prior to becoming a principal while 24% of male principals have 5 years or less teaching experience. Over 50% of principals have less than 10 years of teaching experience when they become principals while the same is true for only less than 1/3 of female principals. Clearly, the road to principalship is uneven at least when teaching experience is concerned.

5.2 Differences in Working Environments

The numeric gap between female and male school principals is felt at all levels and in all types of public schools nationwide. In Table 1 (all tables are appended at the end of this document), a basic breakdown of female and male principals is given, separated by school characteristics and principals' personal attributes. Findings from contingency table analyses (see Table 2) suggest that there is a statistically significant dependency between the gender variable and where principals work, when controlled for personal attribute variations.

Regardless a principal's education background, years of experience in teaching and administration, age, and race-ethnicity identity, a higher proportion of female principals work at large urban and central city public schools. Male principals are more likely to work at rural and small town schools. About 39% of principals in urban/central city schools are female while female principals account for only 21% of the principal workforce in rural and small town schools. The gender effect is consistently significant when the distribution is controlled for variations in principals' personal attributes.

Female principals also tend to cluster into elementary schools. This is consistent with findings from other studies (Pounder, 1988; Brown and Young, 1997). While more

than 38% of elementary school principals are female, female only accounts for 14% of the secondary school principal workforce. As shown later in this paper, the low representation of female principals in secondary schools affect the general income level of female principals. Female principals are also more likely to work at schools with smaller enrollment sizes. While a higher proportion of male principals work at schools with larger than 1000 students, female principals tend to cluster in schools with fewer than 1000 students. A higher proportion of female principals work at schools with higher percentage of minority enrollment while the opposite is true for male principals.

5.3 Differences in Compensation

Overall, the 1993-94 SASS survey of administrator annual salary in public schools suggests that based on the entire sample, male principals have only a small advantage over female principals. The average annual salary for male principals is $54,922 which is not statistically different from female principals' average salary of $54,736. This seemingly minor difference, however, is somewhat deceiving. Hidden in these two average numbers are some very interesting stories about gender differences in compensations.

In Table 3, gender differences in annual salary are further explored through the control of contextual and personal attribute variables. When differences in average salary are divided among different categories of school locations, it appears that the male principals are consistently paid a higher salary and the differences are all statistically significant. For example, when the sample is limited to suburban schools, male principals are shown to make over $2,500 more than their female counterparts on average.

However, when salary differences are examined by school levels, the only statistically significant difference between male and female principals is at the secondary school level, but in favor of female principals. When only secondary school samples are used, female principals are shown to earn $2,758 more than their male counterparts. Nevertheless, it should also be noted that female principals represent only a small percentage of the secondary school principal workforce.

Another interesting finding is the relationship between a principal's administrative experience and income level. When principals' years of experience as principals are taken into consideration, it appears that for principals who have more than 5 years of principal experience, there is no gender effect in salary differentials. In other words, gender is not a factor in determining salary levels of principals who have been on the job for more than 5 years. However, for those with 5 years or less experience as principals, female principals seem to have a lower level of salary, nearly $850 less than their male counterparts. The lower salary level for beginning female principals is worse than the numbers may have suggested because female principals tend to enter the administrator workforce with more years of teaching experience (see Figure 2).

When this difference is examined with the control of school locations (see Tables 4 through 6), the same effect is present at urban and suburban schools but not at rural and small town schools. At urban and suburban schools, female principals with less than 5 years of principal experience earn less than their male counterparts and the differences are statistically significant. At rural and small town schools, there appears to be no significant difference between the average salary of male and female principals with 5 or less years of administrative experience. However, male principals with more than 15 years of

experience at rural and small town schools enjoy higher average salary than their female counterparts.

In general, race has joint effect with gender only when the race is White. White female principals tend to make less than their male counterparts ($53,942 vs. $54,700) and the difference is statistically significant. The difference in compensation between White female and male principals are statistically significant when the sample are separated into locational groups (urban, suburban, and rural/small town). While African American female principals are equal with their male counterparts in urban / central city schools, they fare poorly in suburban schools. Female African American principals on average earn $5,826 less than their male counterparts in suburban schools.

In general, age is not a factor in influencing the gender difference in compensations. Women and male principals have equal pay in each of the five age categories defined in this study. However, when the study sample is divided into three locational groups, age appears to be a factor when principals are younger than 50 years old. In both urban and rural/small town schools, female principals who are younger than 50 years old earn less than their male counterparts of the same age groups.

5.4 Gender Differences in Sense of Empowerment

The SASS Public School Administrator Survey have a number of items to solicit principals' opinions about school problems, principals' assessment of their staff's quality, principals' perception of decision-making powers for themselves and for other stakeholder groups such as parents, teachers, and school board members. In this study, the authors use the principals' assessment of their decision-making power within their schools to create an

index of sense of empowerment. This index may be helpful to understand whether there is a gender gap between male and female principals in their perceived ability to make decisions.

Totally, six questionnaire items are used to construct such an index of sense of empowerment. In each question item, principals were asked to rank the "Actual Influence" they have in the school administration matters. They need to choose one of the six answer choices, ranging from "none" (value = 0) to "a great deal" (value = 5). The school administration matters include:

- Establishing curriculum
- Hiring new full-time teachers
- Setting disciplinary policies
- School budget and spending decisions
- Content of in-service programs
- Teacher performance evaluation

Using ANOVA procedures to analyze gender differences in sense of empowerment, the authors find that female principals in general feel more empowered than male principals. As Table 7 indicates, the average empowerment index score for female principals is 24.7 while the average score for male principals is 24.3. The difference is statistically significant at the 0.05 level. Therefore, even though there are fewer women in the school administrator workforce and women principals tend to make less money than their male counterparts, they feel more empowered. This sense of empowerment is most profound in rural / small town schools where the "good old *White* boys network" is said to be a factor. In rural/small town public schools, female principals have an average empowerment score of 25.19 which is 0.64 points higher than the average score of their male counterparts. The difference is statistically significant at the 0.01 level.

Female principals' greater sense of empowerment can be felt at all levels of schools. When the analyses are controlled for variations in school levels, female principals are shown to have higher average index scores in all three categories of schools. For example, female principals in secondary schools have an average index score of 25.44 while the average score for male principals is 24.63. All differences in perception of empowerment are statistically significant for all three levels of school samples.

Female principals in schools with less than 30% minority enrollment have higher sense of empowerment than their male counterparts. However, this higher sense of empowerment evaporates in schools with more than 30% of minority enrollment. In these schools of higher percentage of minority students, female principals do not have statistically different level of sense of empowerment from their male counterparts.

In terms of a principal's administrative experience, it appears that more years of principal experience a principal has, the less likely she would feel more empowered. In fact, female principals' sense of empowerment seems to decrease with each increase in years of principal experience. Female principals with less than 5 years of administrative experience has an average empowerment score of 24.78 while female principals with greater than 20 years of administrative experience has an average score of 23.31. The difference is 1.47 and is statistically significant at the 0.01 level.

5. Policy Implications

Preliminary findings from this study suggest that despite continuous progress made in achieving gender equity in education, female principals are still under-represented in the public school principal workforce. With a much higher percentage of teachers being

female and America's universities graduating more women with advanced degrees in education administration, there is certainly no shortage of potentially eligible and qualified female candidates for principal positions at all levels of schools. Public policies aimed at promoting greater female participation in educational administration are sound and deserve to be continued.

However, in order to make policy changes more effective in achieving gender equity, efforts to promote greater female participation and to eliminate discriminative practices must be targeted more accurately at areas that need policy interventions the most. For example, the under-representation of female principals is felt the strongest at the secondary school level. More than 85% of secondary school principals are male. Comparatively, only 62% of elementary school principals are male. Because secondary school principals earn higher salary than elementary school principals, the significantly inadequate presence of female principals at the secondary school level thus pull down the overall level of compensation for women principals. A targeted policy response that can most effectively address the gender inequity problem should focus on the increase of female principals at the secondary school level. The next priority is to increase the representation of female principals in rural and small town schools where the gender distributions are lopsided in favor male principals.

Because male principal aspirants with less than 10 years of teaching experience have significantly higher proportion of opportunities to become principals, policies intended to promote greater female representation in the principal workforce should encourage female aspirants to prepare and get involved in school administration activities early in their teaching career. School districts should treat female applicants with relatively

shorter teaching tenures as equally as their male counterparts. There is no evidence to indicate why female principals with less teaching experience are less effective school leaders. In fact, according to teachers' rating of principals' leadership effectiveness, female principals in public schools are rated as more effective than their male counterparts, regardless of their principal experience (Zheng, 1996).

Amid many disappointing areas of gender inequity, the research findings in this study also provide some very positive and encouraging messages. Aside from entrance barriers and the slow pace of achieving a gender balance, the situations for on-the-job female principals are good. Female principals' likelihood of getting promotions and career advancement training opportunities are as good as their male counterparts (Fiore & Curtin, 1997). In this study, the authors find that female principals typically feel a higher sense of empowerment. This higher sense of empowerment may be related to their being rated as more effective school leaders. Additionally, except in the 0-5 years category, female principals with same length of administrative experience seem to have the same level of annual salary as their male counterparts. In other words, except for new principals, experienced male and female principals seem to be paid equally. That by itself is an important achievement.

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Table 1
Distribution of School Principals by Gender by Personal Attributes and School Contexts, 1993-94

Control Variables	Level of Control	Distribution of Sample				Total Sample
		Female		Male		
		n	%	n	%	
School Location	Urban / Central city	843	38.48%	1348	61.52%	2191
	Suburban	702	32.56%	1456	67.47%	2158
	Rural/small town	988	20.80%	3761	79.20%	4749
School Level	Elementary	1589	38.51%	2537	61.49%	4126
	Secondary	495	14.07%	3024	85.93%	3519
	Integrated Elem./Sec.	231	26.49%	641	73.51%	872
School Enrollment Size	250 or less	708	29.34%	1705	70.66%	2413
	251 – 500	764	30.34%	1754	69.66%	2518
	501 – 750	531	28.53%	1330	71.47%	1861
	751 – 1000	228	24.46%	704	75.54%	932
	1001 – 2000	262	21.69%	946	78.31%	1208
	Over 2000	40	24.10%	126	75.90%	166
Percent of Minority Enrollment	10% or lower	1011	22.94%	3396	77.06%	4407
	11% - 20%	273	27.33%	726	72.67%	999
	21% - 30%	211	28.59%	527	71.41%	738
	31% - 40%	173	28.60%	432	71.40%	605
	Over 40%	865	36.82%	1484	63.18%	2349
Principal's Highest Degree	Bachelor	56	40.00%	84	60.00%	140
	Master	1491	26.06%	4231	73.94%	5722
	Doctoral	986	30.49%	2248	69.51%	3234
Principal's Administrative Experience	0 – 5 years	1525	38.29%	2458	61.71%	3983
	6 – 10 years	538	29.53%	1284	70.47%	1822
	11 – 15 years	306	21.05%	1148	78.95%	1454
	16 – 20 years	120	13.20%	789	86.80%	909
	Over 20 years	44	4.73%	886	95.27%	930
Teaching Experience before becoming a principal	0 – 5 years	288	15.34%	1589	84.66%	1877
	6 – 10 years	521	21.65%	1886	78.35%	2407
	11 – 15 years	794	32.04%	1684	67.96%	2478
	16 – 20 years	569	37.17%	962	62.83%	1531
	Over 20 years	361	44.84%	444	55.16%	805
Race	White (non-Hispanic)	1968	25.37%	5790	74.63%	7758
	African-American	369	45.28%	446	54.72%	815
	Other Minorities	329	37.33%	196	62.67%	525
Age	40 or younger	250	28.18%	637	71.82%	887
	41 – 45	584	29.80%	1376	70.20%	1960
	46 - 50	804	27.49%	2121	72.51%	2925
	51 – 55	546	27.27%	1456	72.73%	2002
	Over 55	349	26.36%	975	73.64%	1324

Table 2
Gender and Working Environment Variables
Contingency Table Analysis Outcomes

Variables Cross-Tabulated With Gender	Control Variables	Chi-Sq. Statistic	Distribution Pattern Description
School Locations	Highest Degree[1]	*	Regardless of control variables, a higher proportion of women principals work at central city schools, men are more likely to work at rural/small town schools
• Large/Mid-size central city	Teaching Experience[2]	*	
• Suburban	Administrative Experience[3]	*	
• Rural/Small town	Race-Ethnicity[4]	*	
	Age[5]	*	
School Levels	Highest Degree	*	Regardless of control variables, women principals cluster disproportionately in elementary schools.
• Elementary	Teaching Experience	*	
• Secondary	Administrative Experience	*	
• Integrated Elem./Secondary	Race-Ethnicity	*	
	Age	*	
School Enrollment Sizes	Highest Degree	*	Regardless of control variables, a higher proportion of women principals work at schools with less than 1000 students while male principals more often work at schools with more than 1000 students.
• Less than 250	Teaching Experience	*	
• 250 – 499	Administrative Experience	*	
• 500 – 749	Race-Ethnicity	*	
• 750 – 999	Age	*	
• 1000 – 1999			
• 2000 or greater			
Percent of Minority Enrollment	Highest Degree	*	Except controlled by Race, a higher proportion of female principals work at schools where minority enrollment is more than 20% of student population. When controlled by Race, no statistically significant dependency is detected between gender and % minority enrollment.
• 10% or less	Teaching Experience	*	
• 11% – 20%	Administrative Experience	*	
• 21% – 30%	Race-Ethnicity		
• 31% – 40%	Age	*	
• 41% or greater			

Note: An * indicates that chi-square statistics is significant at the 0.01 level.
(1) Highest degree classifies into 3 groups: bachelor, master, and post-master degrees.
(2) Teaching experience classifies into 5 groups: 0-5, 6-10, 11-15, 16-20, 21 or more years.
(3) Administrative experiences classifies into 5 groups: 0-5, 6-10, 11-15, 16-20, 21 or more years.
(4) Race-ethnicity classifies into three groups: African-American, White, and other minorities.
(5) Age classifies into 5 groups: less than 40, 40-45, 46-50, 51-55, 56 or more years old.

Table 3
Gender Differences in Annual Salary
Controlled for Differences in Personal Attributes and School Contexts

(Overall average salary: Female = $54,736 , Male = $54,922 , The Difference is not statistically significant)

Control Variables	Level of Control	Mean Salary				F-value & test statistics
		Female		Male		
		$	n	$	n	
School Location	Urban / Central city	56,456	843	57,874	1348	10.76*
	Suburban	60,641	702	63,176	1456	22.83*
	Rural/small town	47,716	988	50,036	3761	40.54*
School Level	Elementary	54,134	1589	54,179	2537	0.01
	Secondary	59,065	495	56,207	3024	18.06*
	Integrated Elem./Sec.	52,335	231	52,979	641	0.43
School Enrollment Size	250 or less	50,392	708	49,284	1705	4.10**
	251 – 500	54,005	764	53,072	1754	4.00**
	501 – 750	56,727	531	58,432	1330	9.97*
	751 – 1000	57,436	228	59,849	704	10.99*
	1001 – 2000	65,462	262	65,580	946	0.25
	Over 2000	69,647	40	70,887	126	0.51
Percent of Minority Enrollment	10% or lower	52,540	1011	53,127	3396	1.99
	11% - 20%	57,192	273	57,602	726	0.21
	21% - 30%	54,899	211	55,922	527	2.93
	31% - 40%	53,029	173	54,949	432	3.54
	Over 40%	56,628	865	57,142	1484	1.12
Principal's Highest Degree	Bachelor	38,112	56	44,906	84	8.78*
	Master	54,214	1491	53,820	4231	1.53
	Post-master	56,841	986	57,175	2248	2.38
Principal's Administrative Experience	0 – 5 years	53,721	1525	52,837	2458	5.30**
	6 – 10 years	55,236	538	54,748	1284	0.68
	11 – 15 years	57,475	306	56,286	1148	2.56
	16 – 20 years	55,937	120	55,486	789	0.16
	Over 20 years	60,887	44	57,960	886	2.23
Teaching Experience before becoming a principal	0 – 5 years	53,338	288	54,316	1589	1.56
	6 – 10 years	54,429	521	56,220	1886	9.51*
	11 – 15 years	54,920	794	55,090	1684	0.11
	16 – 20 years	54,654	569	53,928	962	1.46
	Over 20 years	55,796	361	55,243	444	1.37
Race	White (non-Hispanic)	53,942	1968	54,700	5790	6.01*
	African-American	57,676	369	57,658	446	0.00
	Other Minorities	56,153	329	55,287	196	0.81
Age	40 or younger	46,387	250	47,676	637	3.23
	41 – 45	52,562	584	52,576	1376	0.00
	46 - 50	56,356	804	55,503	2121	3.23
	51 – 55	56,723	546	57,132	1456	0.49
	Over 55	57,116	349	58,178	975	1.70

Note: An * indicates statistically significant at the 0.01 level while ** indicates significant at the 0.05 level.

Table 4
Gender Differences in Annual Salary (Urban Schools) Controlled for Differences in Personal Attributes and School Contexts

(Overall average salary: Female = $56,456 , Male = $57,874, The Difference is statistically significant)

Control Variables	Level of Control	Mean Salary				F-value & test statistics
		Female		Male		
		$	n	$	n	
Principal's Highest Degree	Bachelor	-	4	-	8	-
	Master	55,901	515	56,944	886	3.87**
	Doctoral	57,559	320	59,959	457	10.14*
Principal's Administrative Experience	0 – 5 years	55,105	482	56,483	521	5.18**
	6 – 10 years	57,513	195	57,743	261	0.06
	11 – 15 years	58,321	100	58,561	221	0.05
	16 – 20 years	58,474	51	58,952	161	0.07
	Over 20 years	64,151	15	59,915	184	3.25
Teaching Experience before becoming a principal	0 – 5 years	55,286	93	56,973	303	3.37**
	6 – 10 years	55,614	180	58,616	426	11.71*
	11 – 15 years	55,401	269	57,295	341	6.06*
	16 – 20 years	56,406	172	57,506	188	1.57
	Over 20 years	59,527	129	58,391	90	0.61
Race	White (non-Hispanic)	55,048	527	57,208	1024	16.49*
	African-American	59,130	228	60,537	217	2.23
	Other Minorities	56,690	88	59,484	107	4.92**
Age	40 or younger	48,728	57	51,243	85	3.88**
	41 – 45	53,270	181	55,392	258	5.72**
	46 - 50	56,751	274	58,238	436	4.36**
	51 – 55	58,510	195	59,329	345	0.87
	Over 55	60,102	136	60,432	224	0.09

Note: An * indicates statistically significant at the 0.01 level while ** indicates significant at the 0.05 level. A "-" sign indicates a situation in which there are too few cases to make a reliable comparison.

Table 5
Gender Differences in Annual Salary (Suburban Schools) Controlled for Differences in Personal Attributes and School Contexts

(Overall average salary: Female = $60,641 , Male = $63,176, The Difference is statistically significant)

Control Variables	Level of Control	Mean Salary				F-value & test statistics
		Female		Male		
		$	n	$	n	
Principal's Highest Degree	Bachelor	-	6	-	18	-
	Master	59,467	413	62,063	865	13.06*
	Doctoral	62,243	283	65,251	573	10.56*
Principal's Administrative Experience	0 – 5 years	59,486	427	61,945	484	8.74*
	6 – 10 years	60,646	149	62,452	286	2.03
	11 – 15 years	62,920	91	66,308	270	5.61**
	16 – 20 years	63,091	19	61,596	188	0.39
	Over 20 years	67,200	16	64,193	228	0.59
Teaching Experience before becoming a principal	0 – 5 years	59,635	71	63,661	350	6.70*
	6 – 10 years	60,002	140	63,493	445	8.77*
	11 – 15 years	61,348	235	63,672	370	4.33**
	16 – 20 years	59,852	157	61,422	206	1.65
	Over 20 years	60,567	99	62,159	85	0.37
Race	White (non-Hispanic)	60,738	561	63,157	1293	14.83*
	African-American	60,170	80	65,996	95	8.33*
	Other Minorities	58,685	61	59,398	68	0.13
Age	40 or younger	52,049	57	56,220	82	5.67*
	41 – 45	59,072	146	59,978	269	0.63
	46 - 50	61,811	260	63,557	470	3.47
	51 – 55	63,038	154	64,531	373	1.06
	Over 55	64,265	85	65,505	262	0.98

Note: An * indicates statistically significant at the 0.01 level while ** indicates significant at the 0.05 level. A "-" sign indicates a situation in which there are too few cases to make a reliable comparison.

Table 6
Gender Differences in Annual Salary (Rural/Small Town Schools) Controlled for Differences in Personal Attributes and School Contexts

(Overall average salary: Female = $47,716 , Male = $50,036, The Difference is statistically significant)

Control Variables	Level of Control	Mean Salary				F-value & test statistics
		Female		Male		
		$	n	$	n	
Principal's Highest Degree	Bachelor	34,521	42	38,690	62	3.12
	Master	46,987	563	49,044	2480	20.30*
	Doctoral	50,024	383	52,440	1218	13.41*
Principal's Administrative Experience	0 – 5 years	47,384	616	47,682	1453	0.39
	6 – 10 years	47,554	194	50,425	737	13.75*
	11 – 15 years	50,131	115	51,440	657	1.15
	16 – 20 years	47,771	50	50,728	440	3.76**
	Over 20 years	45,694	13	53,238	474	4.75**
Teaching Experience before becoming a principal	0 – 5 years	46,239	124	49,639	936	9.66*
	6 – 10 years	47,969	201	51,438	1015	18.35*
	11 – 15 years	47,990	290	50,419	973	13.54*
	16 – 20 years	48,480	240	48,859	568	0.28
	Over 20 years	46,676	133	47,270	269	0.40
Race	White (non-Hispanic)	47,890	880	50,266	3473	37.92*
	African-American	45,925	61	44,917	134	0.67
	Other Minorities	46,150	47	48,547	154	1.73
Age	40 or younger	41,241	136	45,124	470	20.81*
	41 – 45	47,075	257	49,134	849	9.24*
	46 - 50	49,358	270	50,706	1215	3.87**
	51 – 55	50,244	197	51,336	738	2.08
	Over 55	47,390	128	52,606	489	18.22*

Note: An * indicates statistically significant at the 0.01 level while ** indicates significant at the 0.05 level.

Table 7
Gender Differences in Perception of Decision-making Power Controlled for Differences in Personal Attributes and School Contexts

(Scale Scores Range from 6 – 30. Higher Scores Indicate Perception of Greater Decision-making Power)
(Overall Average scores: Female = 24.70, Male = 24.34, Difference significant at 0.01 level)

Control Variables	Level of Control	Average Ranking				F-value & test statistics
		Female		Male		
		score	n	score	n	
School Location	Urban / Central city	24.02	843	23.72	1348	2.24
	Suburban	24.94	702	24.66	1456	2.47
	Rural/small town	25.19	988	24.45	3761	27.95*
School Level	Elementary	24.95	1589	24.18	2537	8.95*
	Secondary	25.44	495	24.63	3024	17.51*
	Integrated Elem./Sec.	25.06	231	24.34	641	4.15**
School Enrollment Size	250 or less	24.82	708	24.26	1705	8.75*
	251 – 500	24.67	764	24.18	1754	6.22*
	501 – 750	24.74	531	24.50	1330	1.45
	751 – 1000	24.74	228	24.45	704	1.13
	1001 – 2000	24.40	262	24.71	946	1.31
	Over 2000	24.23	40	24.35	126	0.03
Percent of Minority Enrollment	10% or lower	24.76	1011	24.29	3396	3.88**
	11% - 20%	25.39	273	24.21	726	20.72*
	21% - 30%	25.44	211	24.37	527	10.25*
	31% - 40%	25.05	173	24.41	432	3.08
	Over 40%	24.17	865	24.04	1484	0.48
Principal's Highest Degree	Bachelor	22.36	56	24.55	84	4.40**
	Master	24.77	1491	24.28	4231	17.35*
	Doctoral	24.71	986	24.46	2248	2.62
Principal's Administrative Experience	0 – 5 years	24.78	1525	24.29	2458	13.21*
	6 – 10 years	24.89	538	24.64	1284	1.64
	11 – 15 years	24.44	306	24.33	1148	0.23
	16 – 20 years	23.86	120	24.07	789	0.24
	Over 20 years	23.31	44	24.33	886	2.50
Teaching Experience before becoming a principal	0 – 5 years	24.29	288	24.62	1589	1.72
	6 – 10 years	24.61	521	24.54	1886	0.18
	11 – 15 years	24.84	794	24.17	1684	14.39*
	16 – 20 years	24.89	569	24.05	962	13.76*
	Over 20 years	24.50	361	23.69	444	4.72**
Race	White (non-Hispanic)	24.81	1968	24.32	5790	22.39*
	African-American	23.91	369	23.95	446	0.02
	Other Minorities	25.32	329	25.32	196	0.00
Age	40 or younger	24.86	250	24.87	637	0.00
	41 – 45	24.75	584	24.66	1376	0.20
	46 - 50	24.83	804	24.24	2121	13.38*
	51 – 55	24.37	546	24.31	1456	0.10
	Over 55	24.72	349	23.86	975	8.96*

Note: An * indicates statistically significant at the 0.01 level while ** indicates significant at the 0.05 level